MEMORANDUM

To: Members of the Subcommittee on National Security, Emerging Threats, and International Relations

Members of the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census

From: Christopher Shays, Chairman
Adam Putnam, Chairman

Date: November 3, 2003

Subject: Briefing Memo for November 6, 2003 Joint Subcommittee Hearing entitled, "Public Safety Interoperability: Can You Hear Me Now?" 10:00 a.m., Room 2154 Rayburn House Office Building

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PURPOSE OF HEARING

The purpose of this hearing is to examine the challenges of communications interoperability for first responders and look at the programs and policies of the Federal Government in responding to those challenges. The hearing will focus on the e-government initiative SAFECOM, the Wireless Public Safety Interoperable Communications Program at the Department of Homeland Security, and the role of the Federal Communications Commission in regulating state and local first responder spectrum allocation and licensing.

What is interoperability? In New York City, the morning of September 11, 2001, New York police officers were able to hear the radio warnings from a helicopter that the North

Tower of the World Trade Center was glowing red, and most of the police officers exited the building safely — while dozens of firefighters, who could not hear these warnings, died when the tower collapsed. The radio communications system of the police was not compatible with the system of the fire department, so no message could be sent.

Communication confusion reigned at the Pentagon that day as well. A report on communications lessons learned from the Pentagon attack issued by the Public Safety Wireless Network maintains that 900 personnel representing 50 secondary agencies responding to the scene just minutes after the attack had no means of direct radio communications with first responders.

Establishing federal communications interoperability initiatives and policies is only part of the effort needed to see that these problems do not happen again. It is the responsibility of all levels of government to help provide first responders adequate communications capability. The federal government cannot force local and state public safety agencies to purchase or modernize equipment and systems, dictate regional cooperation and planning, require mutual interoperability contracts or compacts, standardize communications training and protocols or insure funding will continue on a long term basis. State and local officials and legislators have a lead role to play in overcoming the challenges to public safety interoperability.

HEARING ISSUES

What is interoperability and who really needs to talk or exchange data with whom?

Who are the stakeholders?

Which federal departments and agencies have responsibility to improve public safety communications and allocations?

Is the current federal system able to respond to the communication needs of first responders? Are federal bureaucratic processes helping or hurting?

How long have experts, officials, industry and interested parties grappled with interoperability? How successful have they been to date?

What responsibilities do states and local governments have?

What role does new technology and industry play?

Who should set standards and protocol for communication systems? What should those standards be?

Public Safety Interoperability

Interoperability is the ability of public safety service and support providers—law enforcement, firefighters, EMS, emergency management, public utilities, transportation and others – to communicate with staff from other responding agencies and to exchange voice and/or data communications on demand, in real time. It is the term that describes how radio communication systems should operate between and among agencies and jurisdictions that respond to common emergencies.

It is a common misconception that public safety responders can communicate efficiently and effectively in times of crisis. In many cases, public safety officers do not possess reliable radio systems that allow them to talk to their own agencies.

There are five key reason public safety agencies can't talk to each other:

1. **Incompatible and aging communications equipment-**
   In many jurisdictions radio communications infrastructure and equipment can be 20 to 40 years old. Different jurisdictions use different equipment and different radio frequencies.

2. **Limited and fragmented funding-**
   There is limited funding to update or replace expensive radio communications equipment, and different communities and levels of government have their own funding priorities and budget cycles.

3. **Limited and fragmented planning-**
   Without adequate planning, time and money can be wasted with no net improvement to interoperability. Agencies, jurisdictions and other levels of government compete for scarce dollars, inhibiting the partnership and leadership required to develop interoperability.

4. **Lack of coordination and cooperation-**
   The human factor is a substantial obstacle. Agencies are naturally reluctant to give up management and control of their communications systems. Interoperability requires coordination and cooperation. It requires a certain amount of shared management, control, common policies and procedures. Sustaining interoperability requires leadership, planning, and the development of partnerships among disparate groups at the local, state and federal levels.

5. **Limited and fragmented radio spectrum-**
   There is a limited and fragmented amount of radio spectrum available to public safety users.

Spectrum Allocation for Public Safety

Congestion, interoperability, interference, access and sufficient spectrum to support wireless technologies communications are the major concerns most often mentioned in discussions of public safety wireless communications. Public Safety use is currently spread across the radio frequency spectrum band. The four separate frequency bands currently used by public safety agencies cannot be bridged by system equipment, only by limited purpose patches. There is also spectrum designated for public safety, but much of it is currently unavailable.

The following lists spectrum currently designated for non-federal public safety users and some of the problems in each band.

Congestion: 100-512Mhz Range

The need for spectrum for interoperability is particularly acute in the lower spectrum ranges where the majority of agencies operate. Recent surveys indicate that approximately 65-73% of all law enforcement entities, firefighters and EMS agencies operate land-mobile radio systems in the 100-300 MHz band. Outdated analog equipment adds to this congestion.

Interoperability: Upper 700 MHz Band

Congress passed legislation in 1997 with the intention of assuring an orderly and equitable transition from analog to digital television broadcasting and mandated that analog television broadcasts on all channels were to be phased out and the spectrum cleared for wireless communications, including spectrum designated for public safety agencies by December 31, 2006. Manufacturers that specialize in public safety telecommunications have tested new wideband applications to operate at 700MHz in response to the standards set through the Federal Communications Commission this year. These new products have not been widely purchased by state and local first responders, however, because the band has not been cleared and is still occupied by television broadcasting.

Interference and Access: 800 MHz

Public Safety currently uses 9.5 MHz of spectrum in the 800 MHz range at 806-821 and 851-869. This allocation of spectrum interleaves public safety and private commercial communications using narrow slices of spectrum. This close proximity of public and commercial utilization is widely believed to be the primary cause of interference. There is currently an open proceeding at the FCC to solicit ideas to address interference issues, but there is much difference of opinion on how to mitigate interference in this band. Nextel Communications proposed the Public Safety Consensus Plan in late 2002 which calls for a re-banding, which would group cellular commercial users together and public safety users together. Although there is support for the idea of re-banding, the mechanics and reimbursement details of the Nextel proposal have faced opposition from other cellular commercial interests including the CTIA. Public safety officials and associations have an invested interest in the FCC final rule.

Recently Allocated Spectrum: 4.9 GHz

In response to pressure from public safety organizations and other concerned parties, the FCC has designated 50 MHz of spectrum at 4.9 GHz instead of auctioning it for commercial use. Spectrum in this higher bandwidth requires use of new technologies including new broadband applications such as high-speed digital technologies and the creation of local area networks. As with the 700Mhz, the establishment of licensing rules and technical standards is yet to come, and industry will help develop equipment and networks only when these rules and standards have been set.

BACKGROUND

Radio frequency spectrum is a limited and valuable resource managed by the federal government to maximize efficiency in its use and to prevent interference among spectrum users. All communications operate on designated frequencies using spectrum managed, in general, by either the Federal Communications Commission for private, state and local entities or the National Telecommunications and Information Administration for federal entities, like the Department of Defense, Justice, etc.

There are many federal departments, agencies and interagency groups that have had responsibility for public safety interoperability management long before September 11, 2001. One of the challenges of creating an overall communications architecture for public safety communications policies is that there is currently no required process of integration and decision-making between the major federal departments with jurisdiction. Standards of equipment, protocol for use, licensing, interference, policy making, oversight, enforcement, research, development and integration of new technologies are extremely difficult under the current multi-departmental federal process.

SAFECOM

Authorized by the Office of Management and Budget as one of the 24 electronic government (e-government) initiatives, the primary objective of this initiative is to support interoperability. Wireless Public SAFEty Interoperable COMmunications, dubbed Project SAFECOM, originally assigned to the Department of the Treasury, was recently assigned to the Department of Homeland Security. SAFECOM now serves as the umbrella program within the federal government to coordinate the efforts if local, tribal, state and federal public safety agencies working to improve public safety response through more effective, efficient, interoperable wireless communications. SAFECOM's customer base includes over 44,000 local and state public safety agencies as well as over 100 federal agencies engaged in public safety response. The long-term objectives of Project SAFECOM are to achieve, nationwide: federal-to-federal interoperability; federal-to state/local interoperability and state/local interoperability. SAFECOM also absorbed PSWIN, the Public Safety Wireless Network program created in 1996 to implement plans to foster interoperability among local, state and federal public safety wireless systems.

Federal Communications Commission

The FCC is responsible for regulating and licensing state and local first responder radio frequency spectrum and is key to carrying out any federal first responder spectrum management policies. Although the FCC's chief responsibility is allocation and regulation of spectrum for business, industry and other private users, the FCC has created several key administrative groups to participate in spectrum management and planning for state and local public safety users. In 1986, it formed the National Public Safety Planning Advisory Committee to advise it on management of spectrum in the 800 MHz band. The following year, the FCC adopted a Public Safety National Plan that, among other things, established Regional Planning Committees to develop plans that will be applied to public safety spectrum in the 700 Mhz and 800 MHz bands.

In 1999, the FCC established the Public Safety National Coordination Committee The National Coordination Committee (NCC) was established by the Commission to solicit input from the public safety community in the further development of technical rules and operational standards for the upper 700 MHz public safety band, particularly in regard to interoperability. In November 2001, the Homeland Security Policy Council was created to improve public safety communications in preparation for future terrorist attacks. HSPC also addresses spectrum interoperability and redundancy. This Council provides coordination and oversight of the FCC's actions related to public safety.

In November of 2002, the FCC released the findings of an internal Spectrum Policy Task Force, which in part addressed public safety spectrum users. Recommendations affecting public safety users include fostering new technologies, grouping future allocations based on mutually compatible uses, quantify acceptable levels of interference and continuing to dedicate spectrum for public safety use.

National Telecommunications Information Administration

Under the Department of Commerce, the National Telecommunications Information Administration created a Public Safety Program Office in 1996 charged with formulating and advocating plans and policies for the effective and efficient use of the spectrum by the Federal government by providing leadership, liaison and guidance for the integration of national public safety communications systems, ensuring interoperability among Federal, state and local public safety agencies in coordination with the FCC. In June 1999, the NTIA designated certain federally-allocated radio frequencies for use by federal, state and local law enforcement, and incident response entities.

AGILE, Advanced Generation Interoperability for Law Enforcement

At the Department of Justice, the National Institute for Justice, AGILE was created in 1998 with a mission to assist State and local law enforcement agencies to effectively communicate with one another across agency and jurisdictional boundaries. It is dedicated to studying interoperability options and making valuable information available

to law enforcement, firefighters, and emergency technicians in different jurisdictions in communities across the country. AGILE also develop new technologies and interoperability solutions that include open architecture standards for voice, data, image and video communications systems.

TESTIMONY

Panel One

The first panel includes representatives from state and local government, who also are members of national associations working on public safety communications interoperability.

The National Public Safety Telecommunications Council

NPSTC, formed in 1997, is a federation of associations representing public safety telecommunications. The purpose of NPSTC is to follow up on the recommendations of the federal Public Safety Wireless Advisory Committee and act as a resource and advocate for public safety telecommunications issues. Members include: International Municipal Signal Association, International Association of Emergency Managers, Forestry Conservation Communications Association, National Association of State Telecommunications Directors, International Association of Chiefs of Police, American Association of State Highway Transportation Officials, International Association of Fire Chiefs, Association of Public-Safety Communications Officials-International, International Association of Fish and Wildlife Agencies, National Association of State Emergency Medical Services Directors, National Association of State Foresters, American Radio Relay League, and the American Red Cross.

The Association of Public-Safety Communications Officials - International, Inc.

APCO International is the world's oldest and largest not-for-profit professional organization dedicated to the enhancement of public safety communications. With more than 16,000 members around the world, APCO International exists to serve the people who manage, operate, maintain, and supply the communications systems used to safeguard the lives and property of citizens everywhere.

The National Association of State Chief Information Officers

NASCIO represents state chief information officers and information resource executives and managers from the 50 states, six U. S. territories, and the District of Columbia. State members are senior officials from any of the three branches of state government who have executive-level and statewide responsibility for information resource management. Representatives from federal, municipal, and international governments and state officials

who are involved in information resource management but do not have chief responsibility for that function participate in the organization as associate members. Private-sector firms and non-profit organizations may join as corporate members.

The National Association of Counties

The National Association of Counties (NACo) was created in 1935 when county officials wanted to have a strong voice in the nation's capital. More than six decades later, NACo continues to ensure that the nation's 3066 counties are heard and understood in the White House and the halls of Congress. NACo's membership totals more than 2,000 counties, representing over 80 percent of the nation's population. NACo, the only national organization that represents county governments in the United States, NACo has active steering committees for Telecommunications and Technology, and Justice and Public Safety.

TeleCommUnity

TeleCommUnity is an alliance of local governments and their associations that are attempting to refocus attention in Washington on the principles of federalism and comity for local government interests in telecommunications. It advocates for local governments' interests on matters of federal telecommunications and broadband legislation that affect their authority, use and control over public lands and rights-of-way, zoning and public use of frequency spectrum. Among these interests are reasonable compensation for use of public real property rights by telecommunications, cable, and broadband companies. The alliance will participate in lobbying, media education, and citizen outreach on these issues.

To carry out its mission, TeleCommUnity is providing an online clearinghouse that provides positive examples of local governments' role in promoting and managing telecommunications development. It also is providing forums, white papers and a speaker's bureau through which local officials can communicate the importance of these principles.

Capital Wireless Integrated Network

CapWIN is a state-of-art wireless integrated mobile data communications network being implemented to support federal, state, and local law enforcement, fire and emergency medical services (EMS), transportation, and other public safety agencies primarily in the Washington, DC Metropolitan area. The purpose of CapWIN is to greatly enhance communication and messaging systems, effectively creating the first multi-state, inter-jurisdictional transportation and public safety integrated wireless network in the United States. CapWIN provides a "communication bridge" allowing mobile access to multiple criminal justice, transportation, and hazardous material data sources.

Panel Two

The second panel includes federal witnesses representing Office of Management and Budget, the Department of Homeland Security, the Department of Justice and the Federal Communications Commission.

WITNESS LIST

Panel One

Mr. William O. Jenkins, Jr.
Director
Homeland Security and Justice Issues
U.S. General Accounting Office

Mrs. Marilyn Ward
Chairman, National Public Safety Telecommunications Council (NPSTC)
Manager, Public Safety Communications Division, Orange County, Florida

Mrs. Aldona Valicenti
National Association of State Chief Information Officers
NASCIO Member to PSWN/SAFECOM
Chief Information Officer, State of Kentucky

Mrs. Marilyn Praisner
Councilwoman, Montgomery County, MD
Chair, Telecommunity
Chair, Technology Committee, National Association of Counties
PSWN Executive Board, CAPWIN Executive Board

Mr. George Ake
Program Director,
Capital Wireless Integrated Network(CAPWIN)

Mr. Vincent Stile
President
Association of Public-Safety Communications Officials, International(APCO)
(written only)

Panel Two:

Ms. Karen S. Evans, E-Gov/IT Director
U.S. Office of Management and Budget

Dr. David Boyd, Program Manager

SAFECOM, Wireless Public Safety Interoperable Communications Program
U.S. Department of Homeland Security

Mr. John Morgan
Assistant Director for Science and Technology
National Institute of Justice
AGILE, Advanced Generation Interoperability Law Enforcement

Mr. John Muleta, Chief
Wireless Bureau
Federal Communications Commission

Mr. Edmond Thomas, Chief
Office of Engineering and Technology
Federal Communications Commission

Sources

"Emergency Communications: Meeting Public Safety Spectrum Needs" CRS Report for Congress, July 1, 2003

"Alternative Frequencies For Use By Public Safety Systems" Response to Title XVII, Section 1705 of the National Defense Authorization Act for FY2001
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"Why Can't We Talk? Working Together to Bridge the Communications Gap To Save Lives" A Guide for Public Officials, National Task Force on Interoperability, February 20003

Spectrum Policy Task Force Report, Federal Communications Commission, November 2002

Homeland Security White Paper, APCO International, August 2002

SAFECOM Update to the Committee on Government Reform, June 27, 2003

Public Safety Communications Standards, Electronics and Electrical Engineering Laboratory, Office of Law Enforcement Standards, National Institute of Standards and Technology

Public Safety Coordination Committee, Federal Communications Commission, Final Recommendations, July 2003

Web Sites for FCC, NTIA, APCO, NACo, AGILE, PSWIN, NPSTC